

Academy

California Academy of Sciences' Member Newsletter

December/January 2000/01



To explore and explain the natural world

STEINHART AQUARIUM • MORRISON PLANETARIUM • NATURAL HISTORY MUSEUM

Message to the Members

These last two months have been extraordinarily busy times at the Academy, and we have lots to celebrate. Our attendance was up over the summer for the first time in years. The new ScienceNOW Kiosk is open. This exhibit, located beside the Biodiversity Center in Cowell Hall, enables us to bring to you



Dr. Patrick Kociolek

timely descriptions and explanations about current stories that you're reading and hearing about in the news. A new book, *The Cultures and Institutions of Natural History*, edited by Academy curators Drs. Michael T. Ghiselin and Alan E. Leviton has just been published. A generous foundation grant has enabled us to purchase a state-of-the-art DNA

sequencer, which will increase our molecular research capacity 16 times. Through support of Lakeside Foundation we are able to bring young scientists from developing countries to study at the Academy. We currently have students from South Africa and Madagascar, and more are scheduled to come this year from Ecuador, Nigeria, and India.

Last month we held an all-day symposium on astrobiology with leading speakers from NASA, the SETI Institute, and universities around the country, who talked about the significance of recent discoveries in this exciting field of research. This was the first of a series of conferences, and its focus was especially appropriate as it combines the Academy's expertise in biology and cosmology. We expect astrobiology to feature prominently in the new Academy.

Planning for the new Academy is well underway. San Francisco's Board of Supervisors recently authorized the issuance of the first \$15 million of bond funds, which will be used to produce engineering plans for our future home. Last summer I said we wanted your input into this process, and I would like to invite you to a special members meeting on January 31 to share with you our current ideas in the planning process.

Patrick Kociolek
Executive Director

RoundAbout

News from Around the Academy

The possibility of extraterrestrial life in our solar system and beyond is a question that stimulates the imaginations of scientists and laypersons alike. In October, scientists from NASA Ames Research Center, the SETI Institute and universities from around the country gathered at the Academy to explore this and other profound questions such as how did life begin? And, what are the possibilities for life on Mars? These questions form the basis of an exciting new field of research called astrobiology that draws from the expertise of biologists and astronomers. Recent discoveries suggesting the presence of water on Mars and Europa and advances in biology that reveal how life originated and diversified on Earth, and that it exists and even thrives in extreme environments today, shed new light on the fundamental questions about the future of life on Earth and beyond.

Closer to home, but worlds away from the hustle and bustle of Western culture is Tanna, an Island in the nation Vanuatu, where people have lived closely with nature and the

spirit world for hundreds of years. The Academy recently welcomed photographer David Becker and his guest Bosen, a resident from Tanna



Nina Jablonski, Bosen and David Becker at the opening of Vanuatu.

Island, for the opening of **At Home in Vanuatu: Tradition in the Western Pacific**, a photographic journey with the ni-Vanuatu people of Melanesia in the South Pacific. Becker, an American photographer, has spent many years living with the people of these volcanic islands. The exhibit features stunning photographs of the people and culture of Tanna, Toka and Malakula Islands as well as artifacts from daily life. The Academy is appreciative of the assistance from the Vanuatu National Museum and Cultural Center, and all the individuals who helped develop this unique exhibit. **At Home in Vanuatu: Tradition in the Western Pacific** continues through March.

Scientists at the Academy's Bernard Osher Molecular

cont. on pg. 14

ACADEMY (ISSN 15312224) is published bimonthly by the California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. Telephone (415) 750-7391, Fax (415) 750-7529. Periodicals Postage Paid San Francisco, California.

POSTMASTER: Send address changes to Academy, Membership Department, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118.

FOR MEMBERS ONLY

December

Members' Holiday Evening

Join us for a special Members' Holiday evening. Headlining the evening's entertainment will be the Walden Marionettes, performing "T'WAS THE NIGHT BEFORE CHRISTMAS, in the auditorium at 7pm. The Walden Marionettes are a Fredricks family group. The troupe, Jack and his son Christopher, has been entertaining children and adults since 1973 from Canada to the Mexican border. Both have studied with Albrecht Roser, the internationally known puppeteer from Stuttgart, Germany. The Fredricks acknowledge that Roser was the inspiration that helped them change from the hidden puppeteer to the open stage: a genre where the puppeteer is in full view of the audience where all can see how the magic is done.

The Academy Gift Store will be open all evening for members to enjoy a 15% discount on all purchases, plus free gift-wrapping. In addition, our own Academy staff will present their exquisite handmade jewelry, candles, cards and more to enrich your shopping experience in African Hall. Light refreshments will also be provided. A visit from Santa bearing a gift for the children and lively, traditional holiday piano music will round out the event.

In this count-your-blessings time of year, all of us in the Academy Membership Office join in wishing you a happy and healthy holiday season.

December 13
6 to 9 pm



PHOTO: JACK AND CHRISTOPHER FREDRICKS

Walden Marionettes



PHOTO: GARY C. WILLIAMS

Mbisuana Village – New Georgia Group

January

Melanesia – A Naturalist's Journal

Melanesia is a vast archipelago in the South Pacific stretching from New Guinea in the west to Fiji in the east. The islands are remarkable for their great diversity—both cultural diversity as well as biodiversity. It is also a region rich in World War II history.

Join Academy Curator Gary Williams to explore various aspects of the magnificent natural history of these beautiful islands, both above and below the surface of the sea.

January 10
2 pm & 7:30 pm, Morrison Auditorium

Meeting with Dr. Patrick Kociolek

Please join our Executive Director to learn more about our exciting plans for the future Academy.

January 31
7–8:30 pm, Morrison Auditorium

Upcoming Events & Lectures

Orchid Fever:

A Horticultural Tale of Love, Lust, and Lunacy

with Eric Hansen, Author/Adventurer

Book-signing to follow
February 14

Warriors of the Clouds – The Lost Chachapoya Civilization of the Upper Amazon

with Keith Muscutt, Assistant Dean of the Arts,
UC Santa Cruz

March 14

Sunrise Sunset

This information was omitted in
California Wild, Fall 2000 "SkyGuide" table

	<u>Sunrise</u>	<u>Local Noon</u>	<u>Sunset</u>
November 1	6:36 a.m. PST	11:53 a.m. PST	5:10 p.m. PST
December 1	7:07 a.m. PST	11:59 a.m. PST	4:51 p.m. PST
January 1	7:25 a.m. PST	12:13 a.m. PST	5:01 p.m. PST

(Times are for San Francisco, CA, and are accurate to within 2 minutes.)

PUBLIC PROGRAMS

Explore the intriguing world of venom through new programs and live animal presentations.

For more information visit our website (www.calacademy.org), or call (415) 750-7145. Most programs will be held in the exhibit and are free for Academy members unless otherwise noted.

VENOMS

STRIKING BEAUTIES

Dangerous Liaisons

Experience the extraordinary world of venomous insects and spiders through a hands-on presentation by the Insect Discovery Lab from San Francisco State University.

December 6, 13, January 10, 17, 31 2 pm

Tarantulas: Beauty or Beast?

Join us for a live tarantula presentation and discover the secrets behind the fangs of these oft-maligned arachnids.

December 7, 28, January 7, 25 12:30 & 2:30 pm

Venoms ER

Discover what happens to people after a venomous bite or sting. See some of the tools used in an emergency room to treat envenomation in humans and learn what you can do locally to avoid a venomous bite or sting.

December 3, 17, January 3, 6, 20, 28 12:30 & 2:30 pm

Rattlesnakes Alive!

Get up close and personal with a live Northern Pacific rattlesnake as naturalist Katie Colbert talks about their



PHOTO: WEBER SHIH

Rattlesnakes Alive! with Katie Colbert

intriguing habits in the Bay Area. This program is presented in conjunction with the East Bay Regional Park District.

December 9
12:30 &
2:30 pm

Snake Mimicry

Meet live snakes and discover how some of them play tricks on predators by changing their appearance and behavior.

December 8, 22 & 29
January 12 & 26 12:30 & 2:30 pm

California Jellies

Submerge into the world of jellyfish off the coast of California as we talk about their venom, distribution and ecology. During this special presentation we'll see live jellyfish polyps, newborn jellies and tentacles up close.

This program will be presented by Dave Wrobel (a.k.a. jellyfish man) who has been photographing and studying jellyfish for over 15 years. Dave currently manages research and development for new displays of jellies at the Monterey Bay Aquarium and has recently published a guide for Pacific Coast pelagic invertebrates in collaboration with Claudia Mills, a zooplankton researcher at Friday Harbor Laboratories at the University of Washington. Dave will be available to sign his new book after each presentation.

January 13 11:30 am, 1 & 2:30 pm



PHOTO: DAVE WROBEL

Purple-stripe jelly

Sea Slug Fest

Stop by the Venoms Exhibit and see preserved toxic sea slugs from around the world as we check them up close through dissecting scopes. Also meet Academy scientist Angel Valdés who will be onsite explaining how some sea slugs use venom and poison as an ultimate weapon.

December 10, January 27 12:30 pm

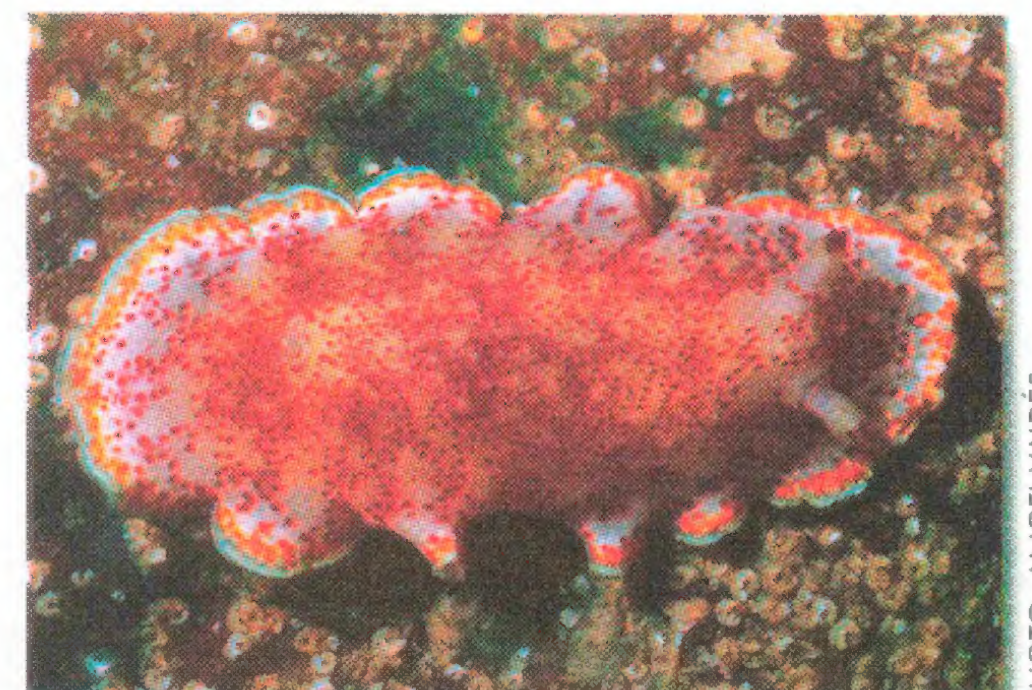


PHOTO: ANGEL VALDÉS

Poisonous Sea Slug

Poisonous, Venomous: Can You Tell?

Poison and venom are terms often used interchangeably, but are they the same? Come in close contact with live toxic creatures as we learn the difference between poison and venom. We'll explore how animals use their toxins along with the effects that poisons and venoms have on potential victims including humans.

December 2 12:30 & 2:30 pm

Studying Venomous Snakes

See a snake biologist in action and participate in an interactive presentation as we uncover the world of venomous snakes.

December 26, January 9 & 23 12:30 & 2:30 pm

TRADITIONAL ARTS OF THE WORLD

All programs take place at 1 pm on select Saturdays in the Morrison Auditorium, unless otherwise noted. Presentations are free after general museum admission, and no reservations are needed. For further information on these and other Traditional Arts Programs, contact Dr. Jennifer Michael in the Anthropology Department at (415) 750-7165, or visit our website. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

December 2—Traditional Tales from Native California

Culture bearer Clarence Hostler will tell two tales from Yurok oral tradition. Both stories are related to the World Renewal Ceremony. The first, from the Yurok village of Weitchpus, recounts the origins of the War Dance Against Evil (what anthropologist Alfred L. Kroeber called the "White Deerskin Dance"). The second, from Pecwan Creek, is called "Coyote Eyes"; this tale teaches the importance of respecting women and elders. This is a special program in honor of American Indian Heritage Month.

December 9—Annual Holiday Concert

Members of the Deutscher Musik Verein brass band return to the Academy for their annual concert of Christmas music from around the world. Get in the holiday spirit and join us in celebrating the joyous sounds of the season. (2 pm, African Hall)

December 16—Liberian Cooking

Yamatta Viaan, from Lofa County in northern Liberia, will demonstrate the preparation of "potato greens," a traditional Liberian dish of sweet potato leaves cooked with chicken and spices. Come enjoy a taste of West African cuisine.

January 6—A Potpourri of American Music

Combining fiddle and guitar with powerful vocals, versatile musicians Eric and Suzy Thompson offer us a little of



Eric and Suzy Thompson

everything in this concert, from blues to Cajun to country. Their fifteen years of performing together have given them an unusual combination of technical virtuosity, unpretentious delivery, and a strong commitment to retaining the essential feel of the many styles they tackle.

January 13—Japanese Paper Marbling

Artist Yoju demonstrates the traditional Japanese art of *suminagashi* or paper marbling. Suminagashi means "spilled ink" or "ink-floating," and this term describes an artistic technique in which colored paints or inks are floated on the surface of water, creating an ephemeral, swirling design that is printed onto paper.



Tezkatlipoka dance group

January 27—Traditional Aztec Dances

David Vargas and the dancers of Tezkatlipoka present a program of dances that derive from the Aztec tradition of pre-Columbian Mexico. Performing to live music, Tezkatlipoka's presentation will include the Warrior or White Eagle Dance and the Fire Dance.

Photo Contest Winners To Be Exhibited

The winners of *California Wild's* first photo contest will be published in the Winter 2001 issue of the magazine. The entries were extraordinary. Many talented photographers submitted their works and as a result, judges decided to exhibit the prize winners, plus an additional ten photographs deserving of Honorable Mention at the Academy. The exhibition opens in Wild California Hall on January 20, 2001.



PHOTO: HAL BERAI

Hermisenda crassicornia

Contest judges included Michael Sewell, co-photographer of *Bay Area Wild* and sole photographer of an illustrated *Sand County Almanac* to be published in 2001. Other judges were Dong Lin, Senior Photographer at the Academy and photographer of *One American Reality*, Exhibits Chair Linda Kulik and *California Wild's* Editor and Art Director, Keith Howell and Susan Schneider.

BENJAMIN DEAN LECTURE SERIES

The Fall 2000 Benjamin Dean Lecture Series gave us a look forward to what we may learn about our Universe during the coming millennium. In December we will look at future possibilities from an historic perspective, and in January the visionary imagination of a science fiction writer will suggest how breakthroughs in understanding may depend on more than just the strict scientific process.

Astronomy in the New Millennium



Anthony F. Aveni

Our idea of a "millennium" begins with the widely held belief that the world progresses through an eternity of ages signaled by spectacular cosmic happenings. One such event, establishing our current millennial reckoning, was the Star of Bethlehem. But there were other events and concepts that preoccupied ancient skywatchers of all cultures. We can use their idea of cyclic

time to trace where our cosmologies of the present, particularly the Big Bang, originated and to contemplate cosmologies that might be devised in the future.

Dr. Anthony F. Aveni, the Russell B. Colgate Professor of Astronomy and Anthropology at Colgate University, is considered a founder of the field of archaeoastronomy. He is best known for his research into the astronomical history of the Maya Indians of ancient Mexico.

Dr. Aveni will discuss "Millennium and Astronomy - Past and Future" on Tuesday, December 12 at 7:30pm and will be available to sign copies of his numerous books. Copies of *Stairway to the Stars: Skywatching in Three Great Ancient Cultures* and *Between the Lines* will be available in the Academy Bookstore.

The Blind Leading the Seers—Science Fiction and Science

Some science fiction writers, like Verne and Clarke and Heinlein, actually predicted future developments in science and, more often, engineering. But that's just informed coincidence. If science fiction were to be judged by its ability to predict the future, it would be judged a dismal failure. However, science fiction has been immensely important to science in two ways: getting young people hooked on science, and keeping the public interested, even excited, about it.

The science fiction that excited actual scientists when they were young was not the careful, informed fiction written by authors with science degrees who study current journals and make painstaking calculations; it was wild arm-waving nonsense like Edgar Rice Burroughs and the Star Trek/Star Wars space fantasies.

Joe Haldeman admits that is a "hard pill to swallow." With an academic background in astronomy and math/computer sciences, he does care about the speed-of-light and silence-in-a-vacuum issues as he writes his own fiction, and when teaching science fiction writing at the Massachusetts Institute of Technology. Tuesday, January 23 at 7:30pm Mr. Haldeman will share his thoughts on modern science fiction writing. He will be available for signing his latest books, *Forever Free* and *The Coming*, following his talk in the Morrison Planetarium.

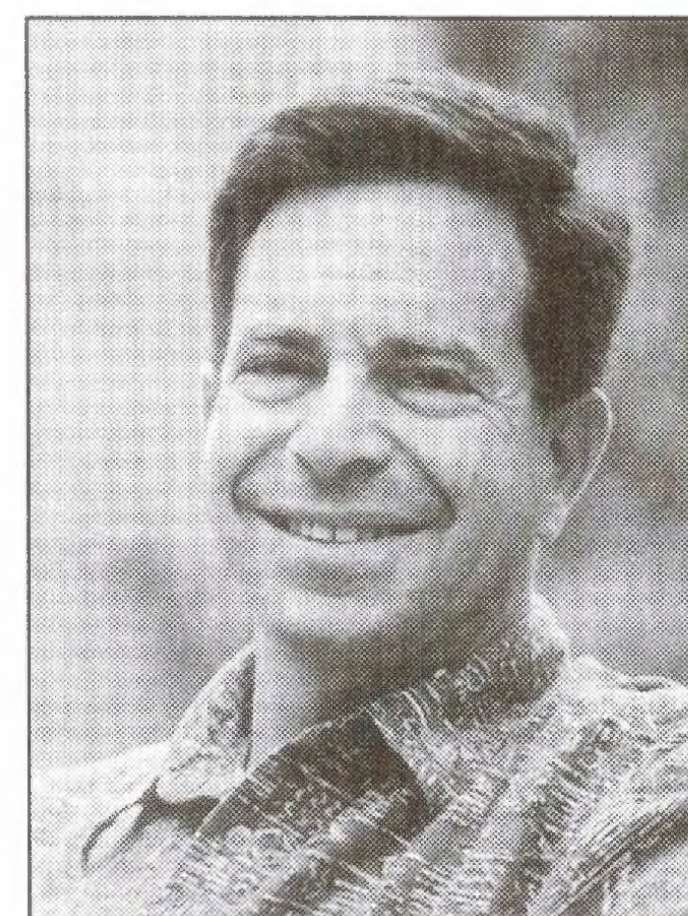
Tickets for Benjamin Dean Lectures are \$3.00 at the door, or purchase ahead through the Planetarium Office. Information: (415) 750-7141

New Series in the Morrison Planetarium—The Dean Booksignings

The Morrison Planetarium introduces a series of special Tuesdays when the Academy Bookstore will be open and selected authors will discuss and sign copies of their books. This series will parallel and complement the Dean Lectures and should appeal not only to that audience, but also to those interested in modern astronomy and space science who do not have as deep a background as our usual speakers assume. All programs will be at 7:30pm in the Morrison Planetarium and will be free to all.

"On the Cosmic Horizon: Ten Great Mysteries for Third Millennium Astronomy"

As an active popularizer of science, Dr. Jeffrey Bennett of the Center for Astrophysics and Space Astronomy in Boulder, Colorado attempts to define and describe the biggest questions in astronomy in a manner that is easily understood by everyone. In his latest book, *On the Cosmic Horizon: Ten Great Mysteries for Third Millennium Astronomy*, Dr.



Jeffrey Bennett

Bennett uses a top ten count-down format to describe each mystery and suggest possible resolutions. Each mystery is framed with a story that draws upon history or human experience and is then investigated in detail. Anyone who wants to understand astronomical headlines and why they are important to our future will find this an engaging work.

January 30 7:30pm Morrison Planetarium, free discussion followed by book signing with Dr. Jeffrey Bennett
Information: (415) 750-7141

MORRISON PLANETARIUM

As the days get short and the nights get long, celebrate with astronomers! Orion the Hunter and Taurus the Bull rise in the east after sunset, their stars like diamonds set in a celestial necklace. Two other jewels are nearby, the planets Jupiter and Saturn, making their best appearances of the year. Jupiter is brighter and lower down. Its four Galilean moons look like tiny pearls through binoculars. Saturn is higher up and not quite as bright. You'll need a telescope to see Saturn's rings, but it's well worth it. Turn around and look to the west for gleaming Venus, taking a turn as the evening star. On the evenings of December 29th and January 28th, the crescent Moon will sit near Venus, making for a spectacular scene.

In the Planetarium, we'll follow the age-old tradition of bringing light inside for the long nights by decorating for the holidays. Come and see how many lights we can find room for this year during showings of The Christmas Star. Then in January, explore the celestial events of the New Year in the show Almanac 2001.

Sky Shows

The Christmas Star

An annual tradition and an audience favorite! What was the mysterious object seen in the sky 2000 years ago that heralded the beginning of a new age? A comet? An exploding star? Something else?

December 1 - January 7 Weekdays 2 pm, Weekends 2 & 3 pm

Almanac 2001

What celestial sights will we be seeing during the coming year? Solar eclipses? Planetary groupings? Meteor storms? Find out in this preview of the year's skywatching highlights!

January 12 - March 11 Weekdays 2 pm, Weekends 2 & 3 pm

The Living Universe

Microfossils on Mars? Bacteria on the Moon? Find out how nature distributes and recycles the stuff of life throughout the cosmos and explore the fascinating ways that life endures on Earth...and possibly beyond!

December 1 - January 31 Weekends: 1 pm

December 27 - 29 2:30 pm

This show continues until June 2001.

Neighbors in Space

In this family show, the cosmic cartoon critter, Moon Mouse, leads an exploration of the Sun, Moon, and the planets of the solar system. Neighbors in Space is offered early in the day for the convenience of Members with younger children.

Ongoing Weekends: 12 pm

December 27 - 29 11:30 am

The Sky Tonight

A relaxing tour of the current night sky, focusing on constellations, visible planets, the phase of the Moon, and upcoming celestial events visible with the unaided eye. This is our most free-form presentation, where the sky is the "star of the show."

No ending date Weekends: 4 pm

December 27 - 29 3:30 pm

Weekend schedule applies on Tuesday December 26, Monday January 1, and Monday January 15.

Please note that the Planetarium will be closed on Christmas Day, Monday December 25.

Schedules are subject to change. Additional shows will be added on the first Wednesday of each month. Please call (415) 750-7141 for recorded information and schedules.

Forty Years and Going Strong...

When Steven Craig joined the Morrison Planetarium in 1960, he was 23 and the Planetarium was eight. He started his career as Assistant Technician in the Planetarium, became Chief Technician in 1962 and was appointed Instrument Shop Supervisor in 1969.

Steve was raised in Berkeley where he hung out with some local hot-rodders including one named Galen Rowell. He attended Oakland City College followed by a three-year stint in the Army, which took him to Panama where he met his wife, Juel. Steve returned to the Bay Area for electronics training at Heald's College.

Now Steve is Chairman of the Morrison Planetarium, a position that he accepted somewhat reluctantly in 1983. "Don't get me wrong," he says, "I love the job, but the deadlines are different, more pressing. When you're working with a leaky roof you have until the rains start to get it fixed; when you have announced a new show opens tomorrow at 2 p.m. you better be ready!"

And for 17 years, ready he has been, though he admits that he has had help. "The Planetarium runs pretty good all by itself," says Craig. "We've got a great staff of people—Bing Quock's been here twenty five years, Liz Keough has been here twenty five years, Rik almost thirty years and John about ten years now."

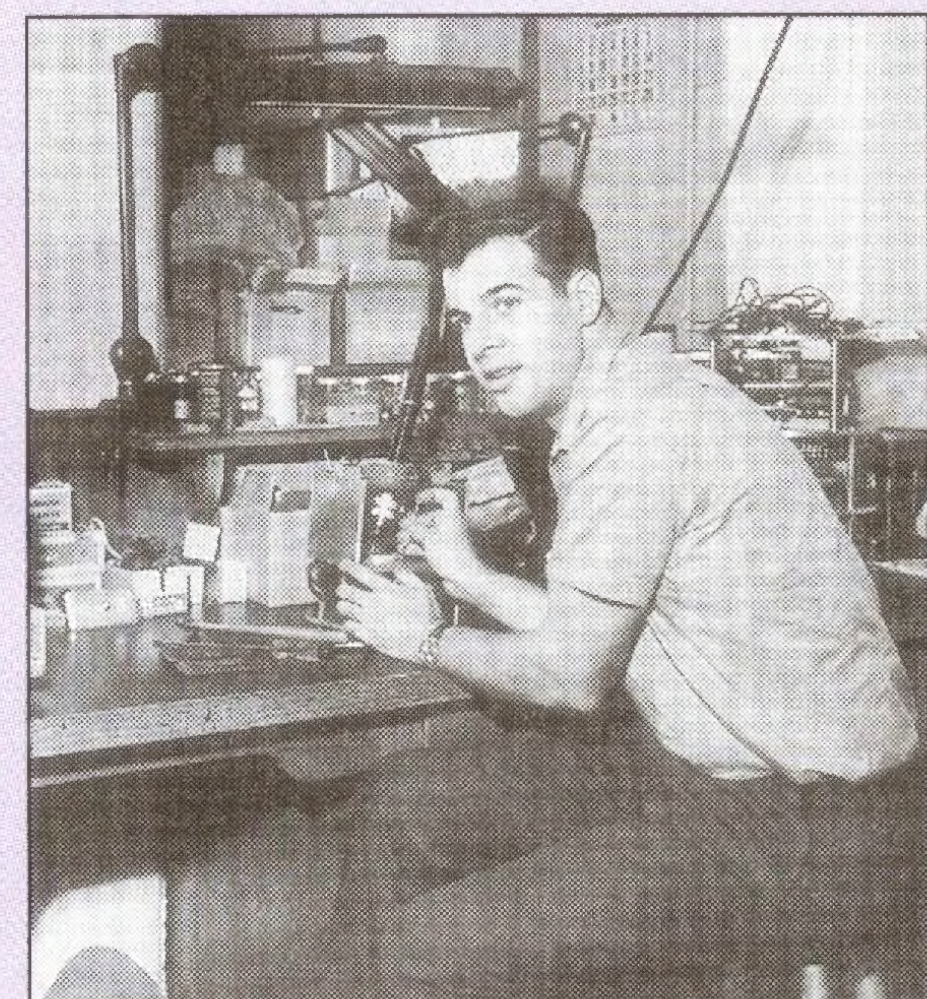


PHOTO: MAURICE GILES

Steven Craig, 1964

December 2000 at the Academy

Sunday

Monday

Tuesday

Wednesday

Thursday

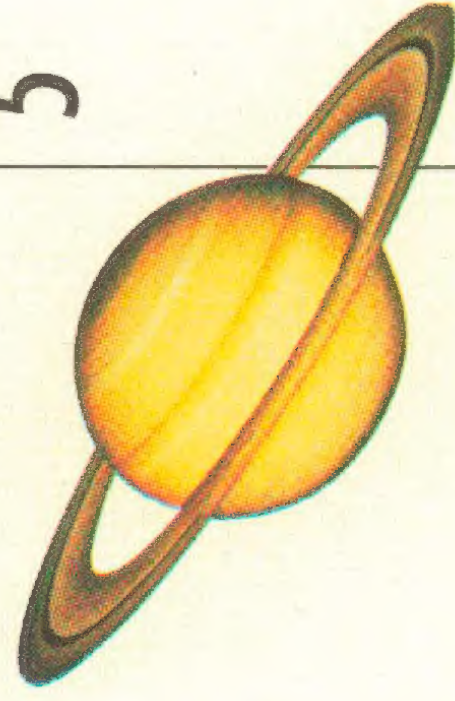
Friday

Saturday

3

Venoms ER (p. 4)

4



5

10

Sea Slug Fest (p. 4)

11

12

Astronomy in the New Millennium (p. 6)

13

Walden Marionettes
(p. 3)
Dangerous Liaisons (p. 4)
Members, Holiday
Evening (p. 3)

14



16

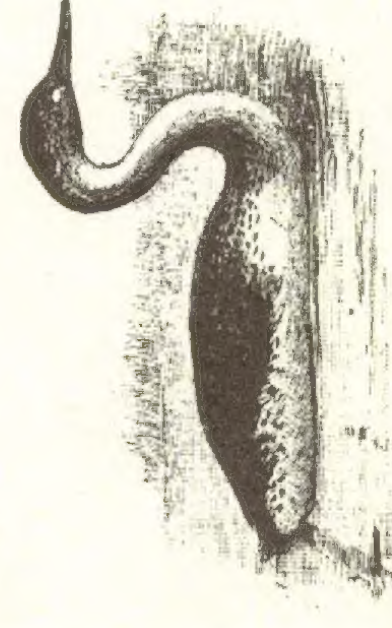
Liberian Cooking (p. 5)

17

Venoms ER (p. 4)
Winter Birds of
Bodega and
Tomales Bay (p. 10)

18

19



20

21

22

Snake Mimicry (p. 4)

23

24

Venoms ER (p. 7)

25

CHRISTMAS DAY
California Academy of
Sciences is OPEN (No
Sky Shows)

26

Studying Venomous
Snakes (p. 4)

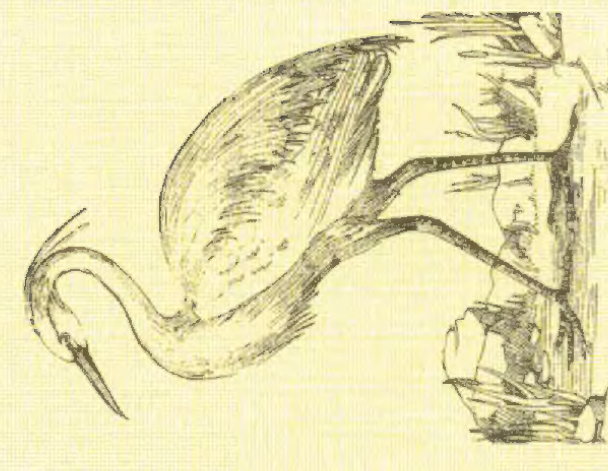
28

Tarantulas: Beauty or
Beast? (p. 4)

29

Snake Mimicry (p. 4)

30

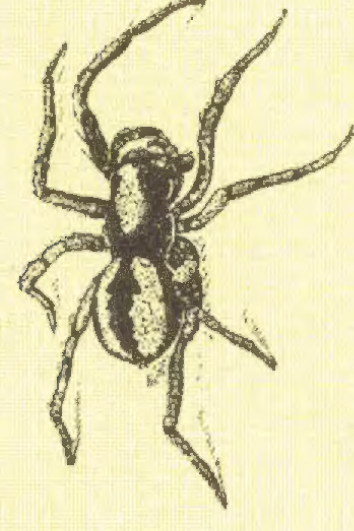


1

The Christmas Star—
Planetarium Show
OPENS (p. 7)

2

Traditional Tales from
Native California
(p. 5)
Poisonous or Venomous:
Can You Tell? (p. 4)



7

Tarantulas: Beauty or
Beast? (p. 4)

6

Dangerous Liaisons (p. 4)

5

8

Snake Mimicry (p. 4)

9

Rattlesnakes Alive! (p. 4)
Annual Holiday Concert
(p. 5)

January 2001 at the Academy

Sunday

Monday

Tuesday

Wednesday

Thursday

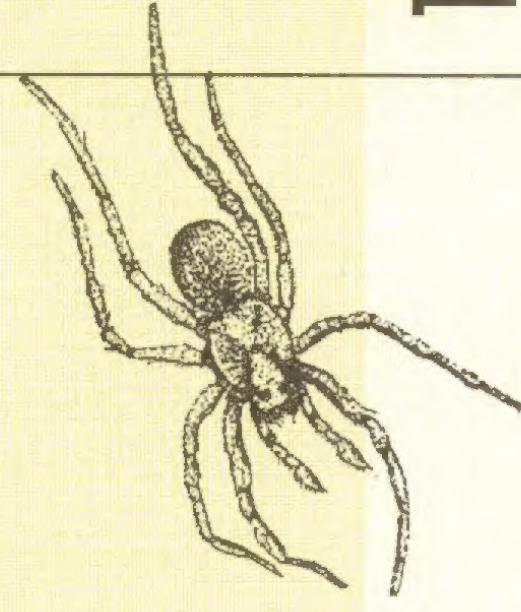
Friday

Saturday

1

NEW YEARS DAY
California Academy of
Sciences is OPEN

2



3

Venoms ER (p. 4)

4

5

6

Venoms ER (p. 4)
Palo Alto Baylands
Preserve (p. 10)
Potpourri of American
Music (p. 5)

8

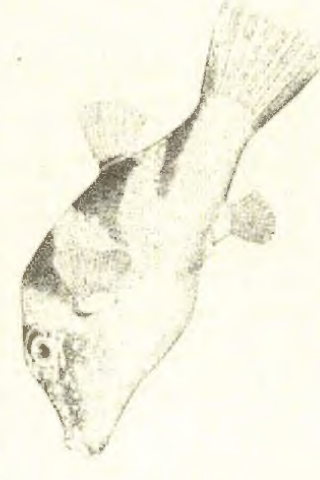
9

Studying Venomous
Snakes (p. 4)

10

Melanesia - A Naturalists
Journal (p. 3)
Dangerous Liaisons (p. 4)

11



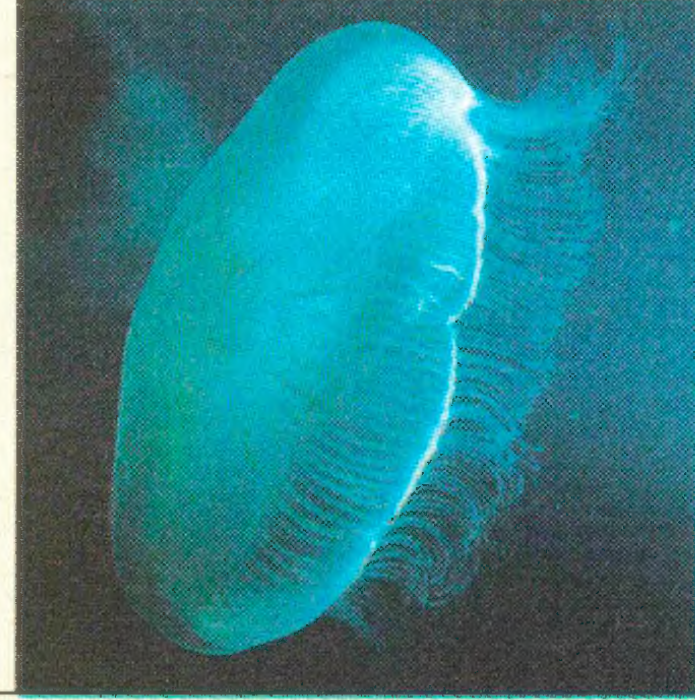
12

Snake Mimicry (p. 4)
Skies of Winter (p. 10)

13

California Jellies (p. 4)
Japanese Paper Marbling
(p. 5)

14



16

The History of
Conservation (p. 10)

17

Dangerous Liaisons (p. 4)

18

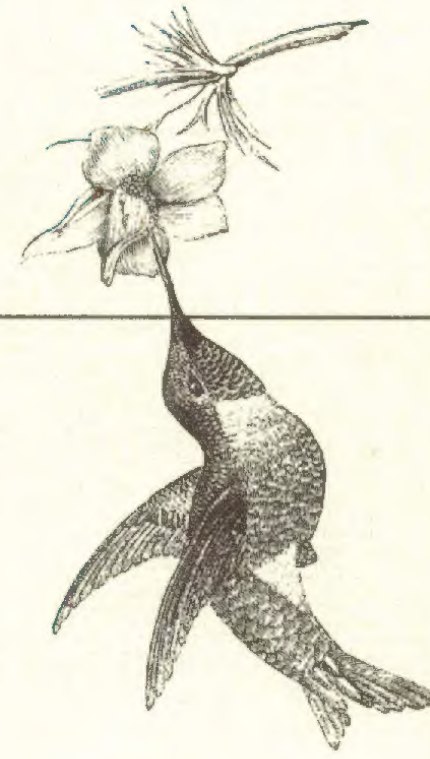
19

Skies of Winter (p. 10)

20

Venoms ER (p. 4)
California Wild Photo
Contest OPENS (p. 5)

22



23

Studying Venomous
Snakes (p. 4)
The Blind Leading the
Seers (p. 6)
Reptiles and Amphibians
Class Begins (p. 10)

24

25

Tarantulas: Beauty or
Beast? (p. 4)

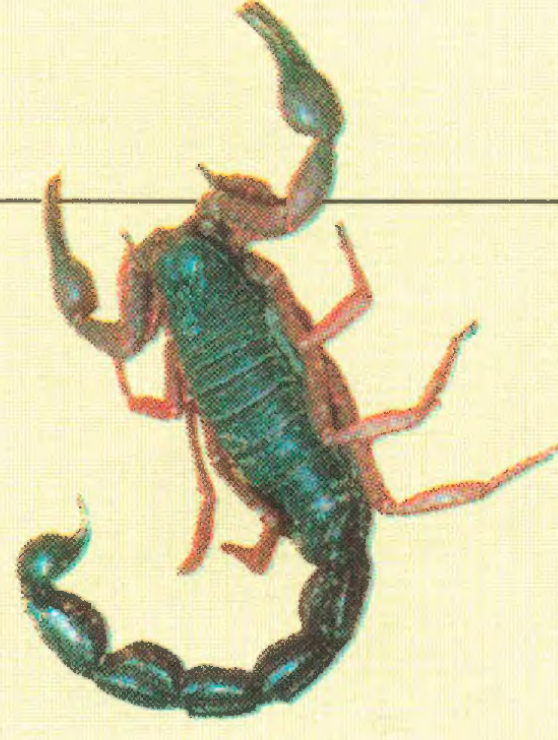
26

Snake Mimicry (p. 4)
Skies of Winter (p. 10)

27

Venoms ER (p. 4)
Traditional Aztec Dances
(p. 5)
Sea Slug Fest (p.4)

29



30

On the Cosmic Horizon
(p. 6)

31

Members Meeting with
Dr. Patrick Kociolek (p.3)
Dangerous Liaisons (p. 4)

7

Tarantulas: Beauty or
Beast? (p. 4)
The Christmas Star—
Planetarium Show
ENDS (p.7)

14

21

28

Venoms ER (p. 4)
Cadillac Desert
Screening (p. 10)

FIELD TRIPS, SEMINARS AND WORKSHOPS

Adult Courses

Winter Birds of Bodega and Tomales Bays

Field Trip

Tomales and Bodega Bays are important wintering areas for thousands of loons, grebes, scoters, and other water birds. The tidal flats, marshes, rocky shores, and beaches provide diverse feeding areas for raptors, shore birds, and waders like great blue herons and great white egrets. Focus on bird identification and behavior during several short and easy walks.

David Wimpfheimer

December 17 (Sunday) 9:30 am–4 pm

\$30 members/\$35 non-members

Palo Alto Baylands Preserve

Field Trip

The wetlands, marshes, and open water at Palo Alto and Mountain View, with their levees and boardwalks, are among the most accessible sites for birders on San Francisco Bay. The Baylands' 1,500 acres include an extensive salt marsh where clapper and black rails are regularly seen. In addition to salt marsh, both the Baylands and Shoreline have freshwater marshes, extensive mudflats and open grassy areas. Spot up to 80 species of birds-including ducks, shore birds, waders, gulls, raptors, and others-wintering in these urban areas.

Dan Murphy

January 6 (Saturday) 8 am–2 pm

\$30 members/\$35 non-members

Skies of Winter

Seminar

Join Stanford for another popular seasonal star-watching class to unravel the mysteries of the winter constellations. Learn how to locate the North Star, find the Flying Horse and the Ethiopian Queen, and distinguish a planet from a star. Enjoy the mythology of the skies, all in the comfort of Morrison Planetarium.

Darryl Stanford

January 12, 19, 26 (three Fridays) 7–9 pm

\$35 members/\$40 non-members

The History of Conservation: The International Legacy of Yellowstone

Seminar

Yellowstone is the first and oldest national park in the world and its creation charted a course for the future conservation of public lands. Wesley will discuss the influence Yellowstone has had in defining how parks are created and managed, both nationally and internationally.

Karla Wesley

January 16 (Tuesday) 7–9 pm

\$15 members/\$20 non-members

Reptiles and Amphibians in Ink and Colored Pencil

Workshop

Chameleons, tortoises and tropical frogs! The vibrant colors and rich textures of reptiles and amphibians are the focus of this workshop as we explore their diversity and beauty with the unique combination of prismacolor and pen-and-ink. Using the Academy's collection, supplemented by illustrations and photos, learn more about our subjects' fundamental structural differences and similarities. With these fascinating creatures as models, beginning and advanced students will develop skills in texture, pattern and color.

Carolynne Griffin

January 23 and 30, February 6 and 13 (four Tuesdays)

7 pm–10 pm

\$95 members/\$105 non-members

Cadillac Desert Screening

To honor the memory of the noted writer Marc Reisner, the Academy will screen the acclaimed PBS television production based on his book, *Cadillac Desert*, in Morrison Auditorium on Sunday, January 28, 2001. The four-hour series will run continuously, beginning at 11:00 am.

Admission is free

Camp Academy

'Camp Academy 2000' celebrated its 9th year this past summer with a diverse science program offering a wide range of courses from the Education Department. Our one-week day camps, Junior Explorers (6-8 yrs old) and Golden Gate Park (9-12 yrs old) were held over a 5-week period. Children from all over the Bay Area came to explore the riches in Golden Gate Park and surrounding habitats such as the Marin Headlands and San Bruno Mountain. They also spent time in the exhibit halls and behind-the-scenes in various research departments meeting Academy scientists and learning about their extensive collections. Like all of our Camp programs, the



PHOTO: EDUCATION DEPARTMENT

Junior Explorers butterflying in Golden Gate Park.

hands-on approach gave campers a unique introduction to the many areas of field-based science providing them with a close-up look at the natural world while instilling a sense of curiosity and wonder.

Our overnight courses started off with a black widow spider and baby rattlesnake greeting campers at Pepperwood Ranch Preserve in Sonoma County, adding a real-life venom-

ous field experience and thrill to the course. Another highlight was the discovery of mutated frogs in one of the smaller ponds, never before documented, leading to a new study by the Academy Herpetology Department!

Bodega Marine Lab provided a unique setting to our Marine Biology course

in which participants discovered 13 different species of nudibranchs and several species of crabs while tide-pooling. Unusually low tides revealed an abundance of other marine life. Hiking through the surrounding dunes at Bodega Head allowed for discovery and identification of a variety of plant and animal species.

Once again, intrepid backpackers experienced the beauty of the Sierra Nevada range in our second year of Sierra Field Ecology. Venturing forth from Echo Lake in the Desolation Wilderness Area, they enjoyed five days of backcountry living, learning not only basic survival skills, but also how to identify plants and trees, birds, and animals. The wildflowers were just nearing the end of their peak and the water temperature in Lake Aloha and Lake of the Woods was just right for jumping in after a day of hiking! Campers honed in on their map reading and compass skills and dinner of macaroni and cheese never tasted so good!



PHOTO: NANCY LAURENSEN

Goat Rock, Bodega Bay.

On Our Cover

Elephant seal reassuring her newborn pup on San Simeon Beach, California.

One of the winning photographs in the *California Wild* Photographic Contest which will be on display at the Academy, opening January 20. Canon EOS1N camera, 80-200mm 2.8 lens, tripod, Fuji Sensia 100 film.

Photograph by Christine Humphreys

Conversations at the Herbst Theatre 2001

Presented by City Arts & Lectures, Inc.

All Programs at 8:00 pm, Herbst Theatre

Thursday
February 8

The Annual Claire Matzger Lilienthal Distinguished Lecture

Dr. James D. Watson, President, Cold Spring Harbor Laboratory, Author *A Passion for DNA: Genes, Genomes, and Society* • *The Double Helix*
In conversation with Matt Ridley
Science Journalist, Author
Genome: The Autobiography of a Species in 23 Chapters

Thursday
March 22

In Collaboration with The Leakey Foundation, Dr. Meave Leakey

Paleoanthropologist, Zoologist, Head, Division of Palaeontology, National Museums of Kenya
The Search and Discovery of our Earliest Ancestors

Wednesday
April 18

James Gleick

Science Writer
Faster: The Acceleration of Just About Everything • *Genius: The Life and Science of Richard Feynman* • *Chaos: Making a New Science*
In conversation with Ellen Greenblatt

Monday
April 30

John L. Heilbron, Ph.D

Science Historian, Author
The Sun in the Church: Cathedrals as Solar Observatories • *Geometry Civilized: History, Culture, and Technique*
In conversation with Roy Eisenhardt

Monday
May 7

Gina Kolata

Science Correspondent, *The New York Times*, Author
'Flu: The Story of the Great Influenza Pandemic of 1918 • *Clone: the Road to Dolly*
In conversation with Roy Eisenhardt

Monday
May 21

Galen Rowell

Photographer, Author
Poles Apart: Parallel Visions of the Arctic and Antarctic • *Bay Area Wild* • *Mountain Light*
In conversation with John McCosker

Lecture:

\$15 members

\$17 non-members

Series:

\$90 members

\$96 non-members

This series is made possible, in part, by a grant from the Richard and Rhoda Goldman Fund.

To order tickets, please call City Box Office at (415) 392-4400. The California Academy of Sciences does not process ticket orders for these lectures.

The Academy's Annual Fund Campaign

You may often hear how important an Annual Fund is to a non-profit organization and wonder, "what exactly is an Annual Fund?"

At the Academy, our Annual Fund forms the financial backbone of our daily operations and budget. Most of the programs and opportunities you read about in our Member Newsletter rely on the success of our Annual Fund. Our public programs provide visitors an opportunity to explore their curiosities and interact with members of the scientific community. During our **Venoms** exhibit, the programming is always dynamic and changing. You may learn about bee stings on a Tuesday and tarantulas on a Saturday. Our Traditional Arts of the World program brings ethnic traditions from around the globe to the Academy every weekend. You may find yourself tapping your foot to Nigerian drumming or smelling the spices of a culinary demonstration from Korea.

The Annual Fund also provides resources for our universally recognized scientific research enabling our researchers to travel to countries such as Madagascar, the Galapagos Islands, Myanmar, Costa Rica, and the Yunnan Province of China so they can explore the flora, fauna, and cultures of these biodiversity hotspots. Their research findings advance the scientific world and enhance the quality of Academy collections, exhibits, education programs, and lectures.

Your membership and additional unrestricted gifts are valued contributions to The Fund and the continuance of our high quality programming depends on the commitment and generosity of our members and donors. If you would like to learn more about our Annual Fund, please call our Development Office at (415) 750-7216.

Halloween Party a "Ghastly" Success

Academy scientists brought out their most spooky specimens and guests were treated to live music by the "Certificates" and Chris Molla, tons of party favors, tattoo and photo booths, "Bubble Smith," clowns, and other great performers. Halloween Party co-chairs were Terrie McDonald and Nelson Ishiyama. We gratefully acknowledge all committee members, donors, and sponsors that contributed to the success of "Venoms and Vipers and Vampires—Oh My!" including the Discovery Channel Store, Tangle Toys, Blockbuster, Inc., Pepsi, and Columbia Printing. Special thanks also to Klutz Books, Marriott International, Sanrio Toys, See's Candies, Wild Planet Toys, Kathleen Milne Company, Applause Inc., Toys "R" Us, HearthSong, and Martha Murray Design. Proceeds from the annual Halloween Party support the research and education programs of the Academy.



PHOTO: DONG LIN

Spooky specimens attract future herpetologists at the Halloween Party.

New Donor Circle Members

July through August 2000: \$125 to \$999

Many thanks to the following new donors and those who have increased their support of the Academy in the last few months.

Mr. Donald W. Baldwin
Mrs. Sandra J. Bedell
Dr. & Mrs. Joseph
Bernstein
Ms. Mary Blake
Dr. & Mrs. Frederic W.
Bost
Dr. & Mrs. Robert Lee
Brown
Mr. Brad Cantos &
Ms. Barbara Sheng
Mr. Jim Clark
Dr. & Mrs. David Collier
Ms. Sherma Cook
Mr. Robert Paul Corbett
Mr. & Mrs. Theodore W.
Craig
Ms. Shirley B. Dawson

Mr. Louis de K. Belden
Mr. M.H. Durr
Mr. Keith Eickman
Mr. & Mrs. Rob Eidson
Mr. & Mrs. Robert Fife
Mr. & Mrs. Martin Fish
Mr. & Mrs. Gerald Freitas
Mrs. Mildred Furness-Hahn
Dr. William A. Galeno
Mr. & Mrs. Tim Gavin
Mr. & Mrs. Roger Gilbertson
Mr. & Mrs. Clinton Gilliland
Mr. & Mrs. David Goodman
Dr. & Mrs. Norman Graff
Ms. Paula L. Hafling
Ms. Maryanna Haskins
Mr. & Mrs. Charles A.
Haynes

Mr. & Mrs. Arthur Hicks
Mr. & Mrs. Tony Hooker
Mr. & Mrs. Zachary Hulsey
Mr. Harold E. Jackson
Mr. Bruce W. Jensen
Ms. Joanne Jepson
Miss Loretta Juhas
Mr. Daniel S. Kane
Mr. & Mrs. Rodney Kay
Mr. & Mrs. Don Klein
Mr. & Mrs. Ari Klionsky
Mr. & Mrs. Jonathan Knowles
Lee Knutsen & William
Hostrop
Mr. & Mrs. Dennis Kossak
Mr. & Mrs. Allan Lacayo
Ms. Jo Anne Larson
Mr. & Mrs. Jeffrey Lipsett

Ms. Marion M. Mack
Mr. & Mrs. James Marver
Dr. & Mrs. Richard L. Miller
Mr. & Mrs. Halsey Minor
Mr. Gregory Morlan
Ms. Diane Ososke
Mr. Kenneth W. Parker
Mr. Stephen R. Pegors &
Ms. Trista Berkovitz
Mr. & Mrs. Eckart Sellinger
Mr. & Mrs. Melvin A. Siegel
Mr. Dennis Singleton &
Ms. Marcia Lennon
Mrs. Marion Softky
Mrs. Samuel B. Stewart
Mr. & Mrs. George Schultz
Mr. & Mrs. John Warthan
Mr. & Mrs. Paul Wattis

Ms. Wendy Werby &
Mr. Michael Ching
Mr. Gerald Wilson
Mr. James Wintersteen
Mr. & Mrs. David
Wong
Mr. & Mrs. Norman
Wray
Mr. Dan Wright
Mr. John J. Wright
Ms. Roberta K. Wright
Mr. Howard Zee

ACADEMY TRAVEL

Lapland: Exploring Europe's Arctic Wilderness

June 2-15 with Dave and Bev Kavanaugh

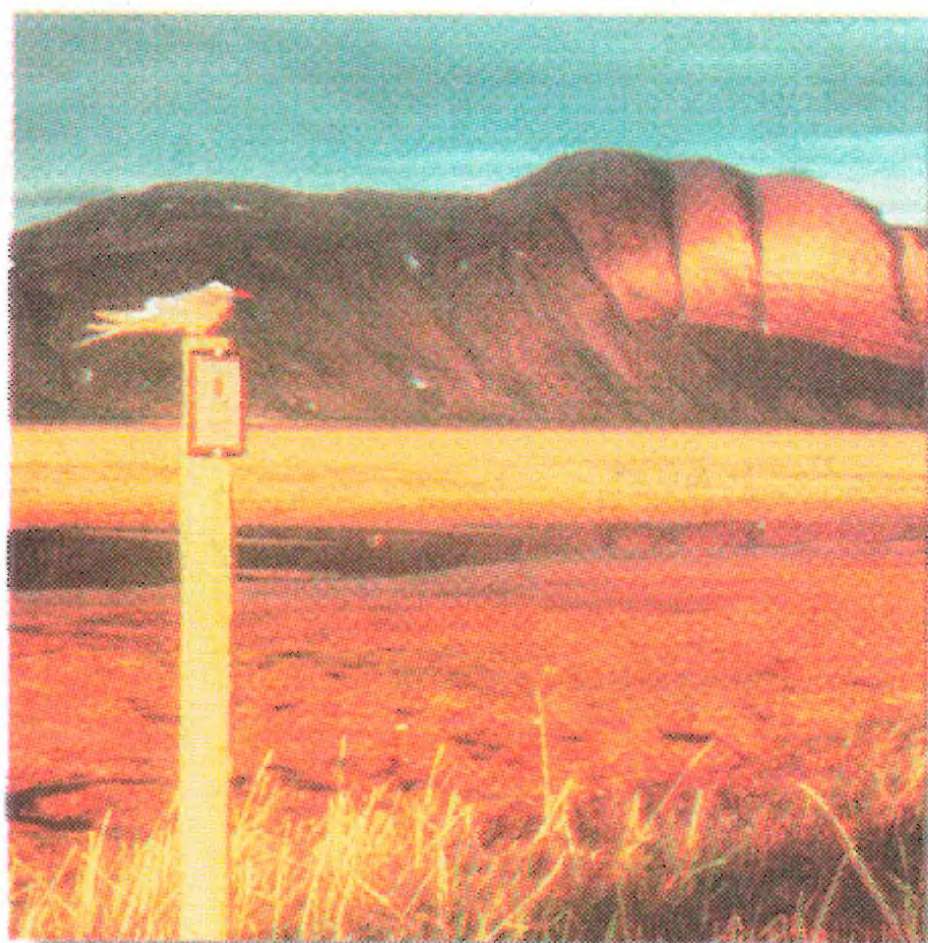


PHOTO: SIEMER & HAND

"Arctic Tern" from Varanger Fjord, Norway

This will be the Academy's first trip to Lapland, Europe's largest remaining wilderness. This exciting new itinerary begins and ends in Helsinki with visits to Oulu, Kuusamo, Ivalo and the Varanger Fjord in Norway. The sun will never set once you cross the Arctic Circle, the birds will be in their breeding plumage, nesting activity will be at its peak, and the sea birds will number in the tens of thousands. Beluga whales and breeding seal populations will be seen and the meadows will be ablaze with wildflowers during the long, mild days. Finnish Lapland, where your visit is concentrated, is a land of contrast. It is a vast and pristine wilderness. Yet, within this great unspoiled land, there is a sophisticated system of roads and comfortable lodges, making this destination easily accessible to travelers.

Cost: \$3845 per person (based on double occupancy) + \$1295 airfare (including flights within Finland). Single supplement (subject to availability) is \$395.

Exploring Alaska's Coastal Wilderness

July 7-14 with Douglas Long

Where can you wake to the cry of a soaring eagle, watch tons of ice thunder from the face of a glacier, walk silently in a majestic spruce forest, and watch the playful antics of humpback whales, while sailing comfortably through calm, protected waters? In Southeast Alaska—a spectacular land of fjords, bays and islands teeming with wildlife and natural beauty.

As you explore Alaska's Inside Passage, you will walk among the spruce forests of Glacier Bay National Park, explore the picturesque coves of Admiralty Island, view close-up the spectacular waterfalls and fjords of Tracy Arm, and meet local artists who continue to maintain their rich cultural heritage.

Aboard the comfortable 70-passenger SEA LION, you will

experience the freedom only a small ship can provide. Her size and maneuverability enable you to explore remote bays and fjords and her fleet of ZODIACS and kayaks allow visitors and naturalists to land almost anywhere.

Cost: \$3,690 - \$5,350 per person (based on double occupancy) + airfare



PHOTO: DAVE KAVANAUGH

Academy members explore Stikine River Flats, Southeast Alaska

For detailed itineraries on these tours please call Kathie Harvey in the Academy Travel Office at (800) 853-9372 or (650) 365-6244 or email calacademy@hcaptravel.com

Outstanding Volunteer: Ted Evans

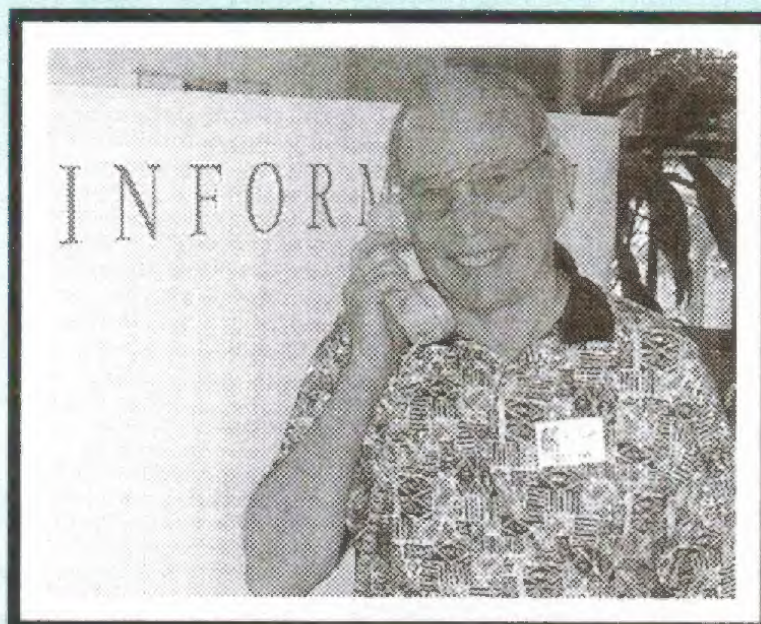


PHOTO: DONG LIN

Ted Evans

"San Francisco has been very good to me." Ted Evans, a retired businessman, repeats throughout his interview.... "and I wanted to give something back." Ted Evans has been very good to the Academy of Sciences. Since his initial attendance in the first Highlight Guide class in 1991 he has been a conscientious "volunteer of all trades," expanding his participation to include the Information Desk where he often does six-hour shifts, Neighborhood Free Days, Members' Open House, and a host of other assignments, which he readily agrees to do with an enthusiastic "sure." Ted's ready smile is a hallmark of his genuine sense of hospitality and obvious pleasure in meeting and greeting all visitors alike, but even more valuable than his welcoming attitude is the wealth of information he is able to impart.

With a background as a City Guide, Beach Chalet explainer and Golden Gate Park Guide he is a connoisseur of San Francisco's history, architecture and geography. The surprising thing about Ted is that, until his wife (who was a former Discovery Room volunteer) suggested he might be interested in the docent program, he had very little background in the natural sciences. Now, he can't believe how passionate he is about the Academy's Life Through Time exhibit and the subject of evolution. Aside from the delight he takes in interpreting the dioramas for the public, he takes especial pleasure in showing his grandchildren around the Academy now that he is able to explain the natural world. On one such visit he knew he had finally won over the confidence and estimation of his 7 year-old granddaughter when she asked, "Tell me exactly! What is botany?"

Ted is always impressed when people come by the Information Desk and say, "What a wonderful place. Thank you." Ted says working at the Academy makes his day. Thank you, Ted, for choosing the Academy "to give something back to."

Order Form

YOUR NAME: _____
 Address _____
 City _____ State _____ Zip _____
 Member # _____
 Phone _____

B. DEAN LECTURE SERIES	Qty Members	Qty Non-Members	Total
Astronomy in the New Millennium	_____ x\$3	_____ x\$3	= _____
The Blind Leading the Seers	_____ x\$3	_____ x\$3	= _____

FIELD TRIPS AND WORKSHOPS	Qty Members	Qty Non-Members	Total
Winter Birds of Tomales Bay	_____ x\$30	_____ x\$35	= _____
Palo Alto Baylands Preserve	_____ x\$30	_____ x\$35	= _____
Skies of Winter (Fridays)	_____ x\$35	_____ x\$40	= _____
The History of Conservation	_____ x\$15	_____ x\$20	= _____
Reptiles and Amphibians in Ink and Colored Pencil	_____ x\$95	_____ x\$105	= _____

DONATIONS

- ☐ I would like to support the Academy of Sciences with a donation. \$ _____
- ☐ Please send me information about effective gift and personal planning in 2000.
- ☐ Please send me information about life income gifts and bequests to the Academy
- ☐ I have already provided for the Academy in my will or other estate plans.

TAX-WISE GIVING

- ☐ Please send me your year-end tax-wise giving brochures.

GIFT MEMBERSHIP FORM

\$60 Family or Grandparent

I wish to give a gift membership to: _____
 Address _____ City _____
 State _____ Zip _____ Phone () _____
 Payment enclosed: _____

TOTAL PAYMENT ENCLOSED \$ _____ ☐ Check (made payable to CAS)

☐ Visa ☐ Mastercard ☐ American Express (\$10 minimum on credit card orders)

Card Number _____ Exp. Date _____
 Daytime Phone _____

Mail payment and order form to: Membership Office, Ticket Services, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-4599.

Include a self-addressed, stamped envelope for each series to which you subscribe.
 No refunds/exchanges.

ROUNDABOUT, cont. from pg. 2

Biology Laboratory are poised to take a quantum leap toward understanding global biodiversity and evolutionary biology with the purchase of new DNA sequencing technology thanks to a generous grant of \$150,000 from an anonymous San Francisco foundation. DNA sequencing instruments sequentially break strands of genetic material, allowing for comparisons of incremental measurements of DNA. Field expeditions to biodiversity hotspots such as Madagascar and Yunnan Province in China enable Academy scientists to continually collect specimens that are new to science and these specimens are frequently identified right here at the Academy using electron microscopy. The new state-of-the-art technology will increase the Academy's molecular research capacity by a factor of 16.

Academy Newsletter (publication # 019-075) is a bimonthly magazine published by the California Academy of Sciences in Golden Gate Park, San Francisco. The Statement of Ownership, Management and Circulation was filed on September 30 1993. Academy Newsletter is included in the annual membership fee of \$40, by the California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-9996.

	Avg. No. copies 12 preceeding months	Issue nearest filing date
A. Total No. Copies (Net Press Run)	29,500	27,000
B. Paid and/or Requested Circulation		
1. Outside county mail subscriptions (Paid and/or requested)	24,825	24,081
2. In-county Mail subscriptions (Paid and/or requested)	0	0
3. Sales through dealers and carriers, street vendors and counter sales	1525	1486
4. Other classes mailed	1525	1486
C. Total Paid and/or Requested Circulation	26,350	25,567
D. Free Distribution by Mail		
1. Outside county	0	0
2. In-county	0	0
3. Other classes	374	541
E. Free Distribution outside mail	2401	221
F. Total Free Distribution	2775	762
G. Total Distribution	29,125	26,329
H. Copies not distributed	375	671
I. Total	29,500	27,000
J. Percent paid/requested circulation	97.14%	97.11%



Published by
 California Academy of Sciences

Executive Director
 Patrick Kocielek, Ph.D.

Publications Manager
 Keith Howell

Editor
 Amy Cramer

Editorial Assistant
 Leah Rosenblum

Design & Production
 Martha Murray Design

Editorial Office: All editorial inquiries should be directed to:
 Dept. of Public Relations & Community Affairs
 California Academy of Sciences
 Golden Gate Park
 San Francisco, CA 94118-4495
 (415) 750-7295
 Fax (415) 750-7530

In Retrospect...

By Academy Archivist Michele Welck

125 Years Ago

January 3, 1876 – “Henry Edwards, first vice-president, read the annual address on the condition and progress of the Academy. He spoke of the past year as an eventful one for the institution. It was poor no longer. The cloud of adversity, which seemed so long to overshadow it and which, but for the untiring energy and hopeful perseverance of a few of its members, would have brought its career of usefulness to a close, had, by the grand beneficence of one man, been removed. He spoke of the example of Mr. Lick in the disposition of his wealth as noble, and said that he had earned for all time the unbounded gratitude of lovers of Science, not only in California, but throughout the whole civilized world.

Gen. Colton, as president of the Board of Trustees, presented an annual report on the condition of the ‘temporal ties’ of the Academy. The amount of money on hand at the beginning of 1875 was \$2958.43 and at the end of that year \$1,598.73. The prospects for the future, however, were bright. The rents of the Market Street property, given by Mr. Lick, which were about \$2,300 annually, had been increased about 100 percent, and it was to be expected that the gross amount for the coming year would be in the neighborhood of \$5,000. In addition to this, the provisions of the Deed of Trust, executed by Mr. Lick, warranted the belief that the princely gift thereby made would enable the Academy to erect on the ground within a few years one of the most magnificent temples of science on the face of the globe.”

The Market St. lot, between 4th and 5th Streets, was given by Mr. James Lick “in consideration of the desire he has to promote the diffusion of Science and the prosperity and perpetuity of the Academy.” His Deed of Trust eventually resulted in an additional \$500,000 gift to the Academy, which funded a large museum and commercial building on the Market St. lot. Mr. Lick is also remembered today through his other bequests, the largest of which provided \$700,000 for the Lick Observatory on Mt. Hamilton.

50 Years Ago

January 1951 – Eight-Pointed Stars – “If the Steinhart Aquarium were ever faced with a lack of attendance – which it isn’t – it would only have to announce an octopus. While

waiting for some professor of psychology to turn in a paper on the mesmeric tropism of *Homo sapiens* toward *Polypus apollyon*, given an intervening layer of plate glass, the man in charge of the Steinhart Aquarium, Dr. Earl S. Herald, is making the most of a new opportunity to study the psychology of octopuses.

Octopuses, the Steinhart people have lamented heretofore, just wouldn’t keep. Then along comes Leslie Salt Co., ready to finance most generously, in the interests of science and the general public, an experiment in keeping saltwater invertebrates alive for exhibit. A refrigerated salt water system was designed to keep four existing Aquarium tanks within a temperature range of 49-54° F [and three octopi took up residence].

A propensity of the octopus under somewhat anxious observation in the Steinhart Aquarium is his expensive appetite for live crab, at the rate of four to ten crabs per week per hungry octopus. In season, in competition with the Fisherman’s Wharf trade for the limited intake of Coast crab pots, this puts a measurable strain on the Steinhart budget. We wonder if there are not fleeting moments when the necessarily expense-conscious Curator catches

himself thinking, Why not turn the darn things loose and let them raid the crab pots for themselves? That way we can eliminate the middleman...”

The Steinhart Aquarium continues to refine its octopus-keeping skills today in the Farallons tank in the Wild California exhibit. According to Helen Tozer, Aquatic Biologist, Academy octopi have an enrichment program which includes live feeds to hunt, octopus treats (prawns and herring), and an active socialization process. “One or two aquatic biologists work with the animal daily, acclimating it to a feeding station, physically playing with the animal on the surface and instigating positive social contact with divers. This type of intensive animal husbandry is more usual for the charismatic mega-vertebrates, but octopus are highly intelligent... Years of learning the hard way have convinced us that it is better for the staff to amuse the octopus than to allow the octopus to amuse itself.”



PHOTO: (N1317) SPECIAL COLLECTIONS/CAS LIBRARY

Mr. James Lick (1796-1876), San Francisco real estate tycoon (and former piano manufacturer in South America), was the Academy’s first major benefactor.

MEMBER INFORMATION

Guided Tours: Free one-hour highlight tours daily

Open every day of the year.

Winter hours (Labor Day weekend to Memorial Day) 10 am – 5 pm

Information Hotline: (415) 750-7145

Website: www.calacademy.org

Weekend Information: (415) 750-7375

Special Lectures: (415) 750-7128

Membership: (415) 750-7111

Library: (415) 750-7102

Education: (415) 750-7100

at home in Vanuatu



TRADITION
IN THE
WESTERN
PACIFIC

*"I have my own special way
of looking at Melanesia. It
comes from making friends
here and living among them.
I come neither as tourist nor
as anthropologist, but as a
friend."*

-David Becker



Children's game on Tanna Island

PHOTO: DAVID BECKER



CALIFORNIA ACADEMY OF SCIENCES



Golden Gate Park

Aquarium Natural History Museum Planetarium

Dedicated to Scientific Research & Education, Inspiring Respect for the Natural World

The Academy encourages the use of public transportation.